

DHS (A-10): sc-365077

BACKGROUND

Deoxyhypusine synthase (DHS) is crucial for the post-translational formation of hypusine, a modification of a specific lysine residue in eukaryotic initiation factor 5A (eIF-5A). Hypusine is formed by posttranslational modifications involving two enzymatic steps catalyzed by DHS and deoxyhypusine hydroxylase (DOHH). eIF-5A is essential for eukaryotic cell proliferation. Deoxyhypusine synthase, which belongs to the deoxyhypusine synthase family of proteins, is important for the first step in the hypusine biosynthesis pathway. It acts as a catalyst for the NAD-dependent oxidative cleavage of spermidine and the ensuing transfer of the butylamine moiety of spermidine to the eIF-5A protein, to create the intermediate deoxyhypusine residue.

CHROMOSOMAL LOCATION

Genetic locus: DHPS (human) mapping to 19p13.2; Dhps (mouse) mapping to 8 C3.

SOURCE

DHS (A-10) is a mouse monoclonal antibody raised against amino acids 70-369 mapping at the C-terminus of DHS of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

DHS (A-10) is available conjugated to agarose (sc-365077 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365077 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365077 PE), fluorescein (sc-365077 FITC), Alexa Fluor® 488 (sc-365077 AF488), Alexa Fluor® 546 (sc-365077 AF546), Alexa Fluor® 594 (sc-365077 AF594) or Alexa Fluor® 647 (sc-365077 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365077 AF680) or Alexa Fluor® 790 (sc-365077 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

DHS (A-10) is recommended for detection of DHS of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for DHS siRNA (h): sc-60535, DHS siRNA (m): sc-60536, DHS shRNA Plasmid (h): sc-60535-SH, DHS shRNA Plasmid (m): sc-60536-SH, DHS shRNA (h) Lentiviral Particles: sc-60535-V and DHS shRNA (m) Lentiviral Particles: sc-60536-V.

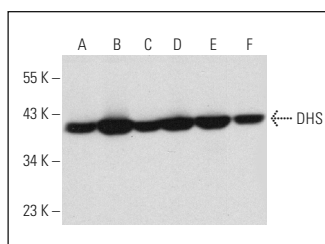
Molecular Weight of DHS: 40 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206, Jurkat whole cell lysate: sc-2204 or NIH/3T3 whole cell lysate: sc-2210.

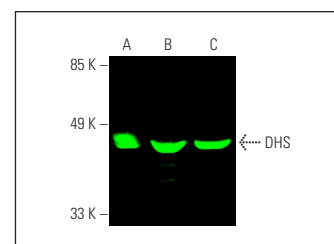
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



DHS (A-10): sc-365077. Western blot analysis of DHS expression in MCF7 (A), Jurkat (B), Sol8 (C), NIH/3T3 (D), KNRK (E) and L8 (F) whole cell lysates.



DHS (A-10): sc-365077. Near-infrared western blot analysis of DHS expression in U266 (A), NIH/3T3 (B) and KNRK (C) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.

SELECT PRODUCT CITATIONS

- Ganapathi, M., et al. 2019. Recessive rare variants in deoxyhypusine synthase, an enzyme involved in the synthesis of hypusine, are associated with a neurodevelopmental disorder. *Am. J. Hum. Genet.* 104: 287-298.
- Levasseur, E.M., et al. 2019. Hypusine biosynthesis in β cells links polyamine metabolism to facultative cellular proliferation to maintain glucose homeostasis. *Sci. Signal.* 12: eaax0715.
- Watanabe, M., et al. 2020. A substrate-trapping strategy to find E3 ubiquitin ligase substrates identifies Parkin and TRIM28 targets. *Commun. Biol.* 3: 592.
- Padgett, L.R., et al. 2021. Deoxyhypusine synthase, an essential enzyme for hypusine biosynthesis, is required for proper exocrine pancreas development. *FASEB J.* 35: e21473.
- Anderson-Baucum, E., et al. 2021. Deoxyhypusine synthase promotes a pro-inflammatory macrophage phenotype. *Cell Metab.* 33: 1883-1893.e7.
- Becker, A.E., et al. 2021. eIF5A-independent role of DHPS in p21^{CIP1} and cell fate regulation. *Int. J. Mol. Sci.* 22: 13187.
- Fiches, G.N., et al. 2022. Polyamine biosynthesis and eIF5A hypusination are modulated by the DNA tumor virus KSHV and promote KSHV viral infection. *PLoS Pathog.* 18: e1010503.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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